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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,157	06/20/2003	Jeremy Donaldson	10015085-6	6924
7590	02/12/2004		EXAMINER	
HEWLETT-PACKARD COMPANY			STEPHENS, JUANITA DIONNE	
Intellectual Property Administration			ART UNIT	PAPER NUMBER
P. O. Box 272400				
Fort Collins, CO 80527-2400			2853	

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/601,157	DONALDSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Juanita D. Stephens	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 5-8 is/are allowed.
- 6) Claim(s) 1-4 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 June 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____.

## DETAILED ACTION

### *Oath/Declaration*

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).

### *Specification*

2. The disclosure is objected to because of the following informalities: ..

On page 2, paragraph 1, line 4 after "number" insert –US 6,672,712 B1--.

Appropriate correction is required.

### *Drawings*

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of "wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is **greater than** a second width that is more distal to the first surface, recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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4. Figures 9 and 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). On page 12, paragraph 44, lines 2-3 discuss Figs. 9 and 10 as being a traditional slotted substrate. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The recitation of "wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is **greater than** a second width that is more distal to the first surface" does not have support in the specification.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 8-10 the recitation of "wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is **greater than** a second width that is more distal to the first surface" cannot be clearly ascertained from the specification or the drawing.

***Allowable Subject Matter***

9. Claims 5-8 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter:

The combination of a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate and a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate, wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is less than a second width that is more distal to the first surface, recited in claim 5. This invention solves the problem of reducing bubble accumulation and/or promote bubbles to migrate out of the compound slot. It is this combination, which is not taught or suggested in the prior art, which make the claims allowable over the prior art.

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The combination of a slot formed in the substrate extending along a long axis and being defined by at least one reinforcement structure which extends across the slot generally orthogonally to the long axis and wherein the reinforcement structure is defined by a portion proximate the first surface which approximates a portion of a triangle, recited in claim 8. This invention solves the problem of allowing the substrate to remain much stronger than a similarly sized traditional slot since substrate material extend between the various slots and increases substrate strength. It is this combination, which is not taught or suggested in the prior art, which make the claims allowable over the prior art.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art of Garcia US 5,317,346 discloses a compound slot as shown on Figure2, **but does not disclose** a trench having a long axis and received in the first surface and extending through less than an entirety of the thickness of the substrate and a plurality of slots extending into the substrate from the second surface and connecting with the trench to form a compound slot through the substrate, wherein a cross-section of the trench taken transverse the long axis has a first width that is proximate the first surface that is less than a second width that is more distal to the first surface, and a slot formed in the substrate extending along a long axis and being defined by at least one reinforcement structure which extends across the slot generally

orthogonally to the long axis and wherein the reinforcement structure is defined by a portion proximate the first surface which approximates a portion of a triangle.

#### Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (703) 308-1204. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Juanita Stephens  
Primary Examiner  
2853  
February 9, 2004